

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/817,272 Confirmation No.: 2294
Applicants : Brian Maxson and James Hicks
Filing Date : April 1, 2004
Title : AUTOMATIC CONVERGENCE FOR PROJECTION
TELEVISION SYSTEMS
Group Art Unit : 2622
Examiner : Trang U. Tran
Docket No. : 705397.4010
Customer No. : 34313

Commissioner for Patents
Mail Stop Amendment
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT AND RESPONSE TO OFFICE ACTION

Sir:

In response to the Office Action dated February 15, 2008, please amend the above identified application as follows:

Amendments to the Claims are reflected in the listing of claims beginning on page 2 of this paper.

Remarks begin on page 4 of this paper.

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

1 – 21. (Previously withdrawn)

22. (Currently amended) A projection system comprising,
a screen,
a projection unit optically coupled to the screen,
a plurality of beacon dots positioned about the periphery of the screen,

and

a detection system optically coupled to the screen and the plurality of
beacon dots, and

a deflection shaping system operably coupled to the projection unit and
the detection system.

23. (Original) The projection system of claim 22 wherein the detection
system includes a photocell and a lens coupled to the photocell.

24. (Original) The projection system of claim 23 wherein the lens is a
fish eye lens.

25. (Original) The projection system of claim 23 wherein the lens is an
insect eye lens.

26 . (Original) The projection system of claim 22 wherein the detection
system comprises an optical element and a detector element comprising an array of

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photodetectors, the optical element being adapted to map a plurality of regions of measurement (ROMs) onto the detector element.

27. (Original) The projection system of claim 26 wherein the optical element comprises an array of lenses.

28. (Original) The projection system of claim 27 wherein the lenses are convex and hexagonal.

29. (Original) The projection system of claim 27 wherein the lenses are Fresnel lenses.

30. (Original) The projection system of claim 26 wherein the optical element comprises a hologram.

31 – 43. (Previously withdrawn)

44. (New) The projection system of claim 22 wherein the deflection shaping system further comprises deflection shaping circuitry used to maneuver a CRT beam.

45. (New) The projection system of claim 22 wherein the deflection shaping system further comprises at least one positioning device operatively connected to said projection unit.

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REMARKS

Claims 22-30 and 44-45 are pending in this application. Claims 22, 23, and 26 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Fendley (U.S. Pat. No. 4,686,429). Claims 24, 25, and 27-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Fendley in view of common knowledge in the art. New claims 44 and 45 do not introduce any new matter.

I. Rejections under 35 U.S.C. § 102

Fendley describes an apparatus capable of measuring electron beam convergence in a traditional multi-beam CRT monitor. Fendley at 1:5-9. The Fendley apparatus discloses a system whose sole objective is to calculate the "measurement of convergence errors" within a CRT device by using a quadrant detector. Col. 1:58-59, Col. 2:31-52. In order to carry out its disclosed function, Fendley describes the measurement process involved in obtaining convergence errors of a traditional CRT monitor. This is due to the inherent complexities contained within a traditional CRT, including phosphor dots 24, 26, and 28 (or phosphor coating), screen 18, faceplate 16, and shadow mask 20. All of these various layers of material are self-contained within a sealed environment comprising the CRT itself. See Fig. 1.

On the other hand, Applicants specification discloses a distinct apparatus wherein the individual structures comprising the Applicants disclosed embodiments are implemented into projection system enclosures. Accordingly, the automated convergence process disclosed by Applicants largely deviates from Fendley. For example, the "detection system" disclosed by Fendley consists of transmitting an image onto a faceplate of a four element quadrant detector wherein the quadrant detector is capable of measuring the divergence of horizontal and vertical lines—a characteristic of traditional CRTs . Col. 5:20-8:44. Whereas Applicants disclose a novel automated correction of calculated convergence error by the use of reflective beacon dots that form the variables necessary to carry out the disclosed algorithms in detecting convergence errors and, further, manipulating the blue, green, and red projection units so as to eliminate said errors. Para. 46. Applicants digital shaping circuitry is electrically

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coupled to at least one positioning device that is capable of steering the beams of the projection units to compensate for any detected convergence error.

The examiner contends that Fendley discloses every limitation of independent claim 22. Applicants respectfully disagree. Pending claim 22 requires that a plurality of beacon dots be positioned about the periphery of the screen. The examiner supports the rejection by citing to Fendley Fig. 1, col. 3:52 – 5:20. Fendley fails to disclose, however, that phosphor dots 24, 26, and 28 are used to in any way to detect convergence errors. To the contrary, Fendley details the manner in which phosphor dots 24, 26, and 28 are used. Phosphor dots 24, 26, and 28 are a subset of the phosphor (or luminescent) coating applied to the internal side of a traditional CRT screen. This phosphor coating is the very basis for being able to provide color luminescence emanating from a CRT apparatus since the electron beam excites the phosphor to produce light. Fendley at 3:62 – 4:18. Moreover, Fendley fails to disclose that these phosphor dots are only to be placed about the periphery of the screen.

In addition to the fundamental differences described above, Fendley fails to disclose any positioning device that is able to maneuver the individual CRTs as a whole. Applicants particularly enable a system wherein the CRTs (or mirrors reflecting images therefrom) may be manipulated by an actuator or other mechanical means. These manipulations correct the determined misalignments automatically from feedback obtained from the digital shaping circuitry. In order to make this distinction clear, Applicants have amended independent claim 22 to include at least one positioning device operatively connected to the projection unit.

Considering the foregoing, independent claim 22 is patentably distinct over the Fendley reference. Accordingly, claim 22 is in condition for allowance. 23-30 depend from claim 22 and thus are also in condition for allowance.

II. Rejections under 35 U.S.C. § 103

In view of the foregoing, it is clear that the Fendley reference cannot be relied upon to form a *prima facie* obviousness rejection of claims 24, 25, and 27-30.

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Accordingly, Applicants further submit that these claims meet the requirements for patentability under 35 U.S.C. § 103.

III. Conclusion

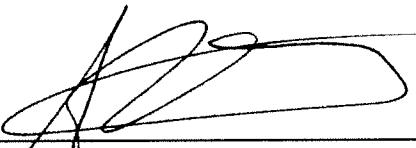
Applicants respectfully assert that claims 22-30 and 44-45 are in allowable form. Prompt and favorable action on the merits of the claims is earnestly solicited. Should the Examiner have any questions or comments, the undersigned can be reached at (949) 567-6700.

The Commissioner is authorized to charge any fee that may be required in connection with this Amendment to deposit account No. 15-0665.

Respectfully submitted,

ORRICK, HERRINGTON & SUTCLIFFE LLP

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By: 
André De La Cruz
Reg. No. 57,229

Orrick, Herrington & Sutcliffe LLP
4 Park Plaza, Suite 1600
Irvine, CA 92614-2558
Tel. 949-567-6700
Fax: 949-567-6710
Customer Number: 34313